2.1.1 Definitions of Travel Time Statistics

The following is a list of the variables, and their respective definitions, reported in the travel time study summaries (*Sections 2.1.2 – 2.1.7*):

Section Number - each travel-time corridor is divided into individual links, or sections, usually defined by a signalized intersection or pedestrian crosswalk. The *section number* is the sequential numbering of these sections.

Length - the average length, in feet, of the individual sections and the overall corridor.

Section Name - the name of the street or pedestrian crossing that defines the downstream end of the individual sections.

Average Travel Time - the average time, in seconds, elapsed while driving between two points.

Standard Deviation - (sec, mph) a measure of the variability of the travel time and average speed.

Average Stops - the average number of stops experienced by section and overall corridor. A stop is defined as a one-second interval where the speed is less than 5 feet per second and the speed was greater than 5 feet per second during the previous one-second interval. Therefore, each time the vehicle slows down and crosses the 5 feet per second threshold, a stop is counted. The vehicle must speed up faster than the threshold before another stop can be counted. When a car stops in queue, slight creeping will not be counted as multiple stops.

Average Speed - (mph) computed by dividing the length by the average travel time.

95% Confidence Interval - (mph) a measure of how well the average speed, calculated from the actual travel time runs, represents the actual average of the entire population. In other words, one can say, with 95% certainty, that the average speed of the entire driving population falls within the range defined by the sample average speed, plus/minus the 95% Confidence Interval. (See also definition for "Range of Average Speed".)

Average Speed Within This Range - (mph) the upper and lower limits for the variation in average speed.

Defined As: Upper Limit = (Average Speed + Confidence Interval)

Lower Limit = (Average Speed - Confidence Interval)

Time Duration Below (Seconds) - the three columns under this variable summarize the amount of time, in seconds, where the vehicle speed was less than or equal to 0, 7 and 28 miles per hour, respectively. These three speeds are commonly used to represent the

speed below which a car is stopped, queued, and delayed on a typical urban street. Speeds above 28 miles per hour are considered “free running”.

Average Delay - difference between the actual travel time and the ideal travel time.

Ideal Travel Time (Unrestricted Travel Time) - the time it would take to traverse the section/corridor at the posted speed limit.

Number of Runs - the number of times the corridor was driven in a specific direction during the noted time period.

Posted Speed Limit - the speed limit posted along the roadway. The posted speed limit is used to calculate the ideal travel time for the corridor. Since the posted speed limit can vary within a particular study corridor, the ideal travel time is computed for each individual segment of the corridor using the posted speed limit for that segment.

Fuel (gal.) - the average amount of fuel, in gallons, consumed in traversing the section/corridor. Computed using a fuel consumption model developed by the Australian Road Research Board.

HC, CO, NOx (grams) - the average amount of hydrocarbons, carbon monoxide and nitrous oxides emitted while traversing the section/corridor. Computed using the MICRO2 model developed by the Colorado Department of Transportation.

The following six sections summarize the results of the “before” and “after” travel time studies. Detailed “after” travel time summaries for each corridor, time period and direction are provided in Appendix A. Summaries of the “before” travel time studies were previously submitted as part of Phase I of this project. These summaries also provide average travel time statistics for the individual segments that comprise each of the six corridors.